

In the recent Office action, dependent claims 8-18, 29, 30, and 32-39 were found allowable.

By these amendments, claim 1 has been amended to include the limitations of claim 8, claim 8 has been cancelled, and claim 16 has been rewritten in independent form. Various dependent claims have been amended to correct their dependency. Similarly, claim 19 has been amended to include the limitations of claim 29, claim 29 has been cancelled, and claim 32 has been rewritten in independent form; and various dependent claims have been amended in minor ways. No new matter has been added.

This Supplement is filed because claim 24 was cancelled previously, the undersigned being reminded by the Examiner in a phone call, and so the subject matter claimed in the recently-filed response after final is now recited in new claim 21. In addition, it is intended by this response that the non-elected claims be cancelled, as well as claims 8 and 29.

Accordingly, it is believed that all of the presently amended claims are allowable action in that regard is now warranted.

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DATE: 1 May 2003

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Respectfully submitted,


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APPENDIX SHOWING MARK-UPS OF AMENDMENTS

IN THE CLAIMS:

Cancel claims 3, 8, 20, 21, 24, 29.

1. (Twice amended.) A wiring board comprising:

an insulate base material;

a conductor pattern formed thereon; and

a magnetic thin film formed on said conductor pattern, said magnetic thin film being made of a magnetic loss material having a maximum value of μ''_{\max} of loss factor μ'' that is the imaginary component in the complex permeability characteristic of said magnetic loss material, said maximum value μ''_{\max} existing within a frequency range of 100 MHz to 10 GHz,

said magnetic loss material being a composition represented by M-X-Y, wherein M is at least one of Fe, Co, and Ni, X is at least one element other than M or Y, and Y is at least one of F, N, and O, and having a relative bandwidth bwr that is not greater than 200% where the relative bandwidth bwr is obtained by extracting a frequency bandwidth between two frequencies at which the value of μ'' is 50% of the maximum μ''_{\max} and normalizing the frequency bandwidth at the center frequency thereof.

2. (Amended.) The wiring board according to claim 1, wherein said magnetic thin [films are] film is formed on said conductor pattern[s] along an outer surface[s] of said conductor pattern[s].

6. (Amended.) The wiring board according to claim 1, wherein said magnetic thin [films are] film is produced by at least one of sputtering and vapor deposition.

7. (Amended.) The wiring board according to claim 1, wherein the thickness of said magnetic thin film[s] is within the range of 0.3 μm to 20 μm .

9. (Amended.) The wiring board according to claim [8] 1, wherein the X component of said magnetic loss material is at least one of C, B, Si, Al, Mg, Ti, Zn, Hf, Sr, Nb, Ta, and rare earth elements.

10. (Amended.) The wiring board according to claim [8] 1, wherein, in said magnetic loss material, said M exists in a granular form dispersed in a matrix of said X-Y compound.

11. (Amended.) The wiring board according to claim [8] 1, wherein the mean particle diameter of particles M having said granular form is within the range of 1 nm to 40 nm.

12. (Amended.) The wiring board according to claim [8] 1, wherein said magnetic loss material exhibits an anisotropic magnetic field H_k of 600 Oe (4.74×10^4 A/m) or less.

13. (Amended.) The wiring board according to claim [8] 1, wherein said magnetic loss material is selected from $\text{Fe}_\alpha\text{-Al}_\beta\text{-O}_\gamma$ or $\text{Fe}_\alpha\text{-Si}_\beta\text{-O}_\gamma$.

14. (Amended.) The wiring board according to claim [8] 1, wherein the size of the saturation magnetization in said magnetic loss material is within a range of 80% to 60% of the saturation magnetization of a metal magnetic body consisting solely of the M component.

15. (Amended.) The wiring board according to claim [8] 1, wherein said magnetic loss material exhibits a DC electrical resistivity that is within a range of $100\ \mu\Omega\cdot\text{cm}$ to $700\ \mu\Omega\cdot\text{cm}$.

16. (Amended.) [The wiring board according to claim 1, wherein said magnetic thin film is configured of a magnetic loss material having] A wiring board comprising:

an insulative base material;

a conductor pattern formed thereon; and

a magnetic thin film formed on said conductor pattern, said magnetic thin film being made of a magnetic loss material having a maximum value μ''_{max} of loss factor μ'' that is the imaginary component of the complex permeability characteristic of said magnetic loss material, said maximum value μ''_{max} existing within a frequency range of 100 MHz to 10 GHz, said magnetic loss material being a composition represented by M-X-Y, where M is at least one of Fe, Co, and Ni, X is at least one element other than M or Y, and Y is at least one of F, N, and O,

[said magnetic loss material is a broad-band magnetic loss material in which maximum value μ''_{max} of loss factor μ'' that is imaginary component in

complex permeability characteristic of said magnetic loss material existing within a frequency range of 100 MHz to 10 GHz,] and having a relative bandwidth bwr that is not smaller than 150% where the relative bandwidth bwr is obtained by extracting a frequency bandwidth between two frequencies at which the value of μ'' is 50% of the maximum μ''_{\max} and normalizing the frequency bandwidth at the center frequency thereof.

19. (Twice amended.) A wiring board comprising:

a board comprising at least one insulative layer and at least one conductor part; and

a magnetic thin film disposed on at least one part of said board, said magnetic thin film being made of a magnetic loss material having maximum value μ''_{\max} of loss factor μ'' that is an imaginary component in the complex permeability of said magnetic loss material, said maximum value μ''_{\max} existing within a frequency range of 100 MHz to 10 GHz,

wherein said magnetic loss material is a composition represented by M-X-Y, where M is at least one of Fe, Co, and Ni, X is at least one element other than M or Y, and Y is at least one of F, N, and O, and wherein said magnetic loss material has a relative bandwidth bwr that is not smaller than 150% where the relative bandwidth bwr is obtained by extracting a frequency bandwidth between two frequencies at which the value of μ'' is 50% of the maximum μ''_{\max} and normalizing the frequency bandwidth at the center frequency thereof.

22. (Amended.) The wiring board according to claim 19, wherein said conductor part comprises a signal line conductor pattern[s].

23. (Amended.) The wiring board according to claim 22, wherein said magnetic thin film is formed on said signal line conductor pattern[s].

30. (Amended.) The wiring board according to claim [29] 19, wherein the size of the saturation magnetization in said magnetic loss material is within a range of 60% to 35% of the saturation magnetization of a metal magnetic body consisting solely of said M component.

32. (Amended.) [The wiring board according to claim 22, wherein said magnetic thin film is configured of a magnetic loss material having] A wiring board comprising:

a wiring board comprising at least one insulative layer and at least one conductor part; and

a magnetic thin film disposed on at least one part of said board, wherein said magnetic thin film is made of a magnetic loss material having a maximum value μ''_{max} of loss factor μ'' that is the imaginary component of the complex permeability of said magnetic loss material, said maximum value μ''_{max} existing within a frequency range of 100 MHz to 10 GHz

wherein said magnetic loss material is a composition represented by M-X-Y, wherein M is at least one of Fe, Co, and Ni, Y is at least one of F, N, and O, and X is at least one element other than M or Y, [said magnetic loss material is a

narrow-band magnetic loss material in which maximum value μ''_{\max} of loss factor μ'' that is imaginary component in complex permeability of said magnetic loss material exists with a frequency range of 100 MHz to 10 GHz,] and wherein said magnetic loss material has a relative bandwidth bwr that is not greater than 200% where the relative bandwidth bwr is obtained by extracting a frequency bandwidth between two frequencies at which the value of μ'' is 50% of the maximum μ''_{\max} and normalizing the frequency bandwidth at the center frequency thereof.

Please add the following new claim:

—40. The wiring board according to claim 22, wherein said magnetic thin film is formed so as to be separated from said signal line conductor pattern in a portion where said signal line conductor pattern is not formed.—